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PRODUCTION OF CRUDE OIL

LETTER FROM THE DIRECTOR OF THE BUREAU OF MINES

TRANSMITTING

IN RESPONSE TO A SENATE RESOLUTION OF SEPTEMBER 11, 1918,
CERTAIN INFORMATION IN REGARD TO THE PRODUCTION AND
CONSUMPTION OF CRUDE PETROLEUM AND OTHER MINERAL
OILS SO FAR AS STATISTICS ARE AVAILABLE; ALSO A LETTER
IN RESPONSE TO A SENATE RESOLUTION OF SEPTEMBER 13, 1918,
TRANSMITTING CERTAIN INFORMATION AS TO WHAT RELIEF THE
SPEEDY ENACTMENT OF THE BILL (S. 2812) TO ENCOURAGE AND
PROMOTE THE MINING OF COAL, PHOSPHATE, OIL, GAS, AND
SODIUM ON THE PUBLIC DOMAIN WILL GIVE TO THE THREAT-
ENED SHORTAGE IN THE SUPPLY OF CRUDE OIL

SEPTEMBER 24 (calendar day, SEPTEMBER 26) 1918.—Ordered to be printed,
with an illustration

WASHINGTON
GOVERNMENT PRINTING OFFICE
1918

PRODUCTION AND CONSUMPTION OF CRUDE PETROLEUM AND OTHER MINERAL OILS.

LETTER FROM THE DIRECTOR OF THE BUREAU OF MINES TRANSMITTING, IN RESPONSE TO A SENATE RESOLUTION OF SEPTEMBER 11, 1918, CERTAIN INFORMATION IN REGARD TO THE PRODUCTION AND CONSUMPTION OF CRUDE PETROLEUM AND OTHER MINERAL OILS, SO FAR AS STATISTICS ARE AVAILABLE.

SEPTEMBER 19, 1918.—Ordered to lie on the table.

DEPARTMENT OF THE INTERIOR,
BUREAU OF MINES,
Washington, September 18, 1918.

SIR: The Bureau of Mines respectfully submits the following information in response to S. Res. 301, of September 11, 1918, which reads as follows:

Resolved, That the Bureau of Mines be directed to send to the Senate any information in their possession in regard to the production and consumption of crude petroleum and other mineral oils in this country, and the amount required for export and the estimated stocks on hand at the present time.

Statistics on the production and consumption of crude petroleum are collected by the United States Geological Survey, whereas the Bureau of Mines collects reports on the monthly production and stocks on hand of petroleum products. Such statistics, unfortunately, are not available prior to January, 1917, and estimates must suffice for August of this year.

The bureau's method of determining the production and the storage of refined products is by requesting the refiners of the country to submit individual reports each month. These reports show the amount of crude oil run to the stills; the partly refined oils rerun, and the casing-head gasoline used for blending purposes. In addition, the monthly output and the stocks on hand of the following products are given: Gasoline, kerosene, gas and fuel oils, lubricating oils, paraffin wax, petroleum, coke, asphaltum, and miscellaneous oils.

Table 1 gives these statistics for the whole of 1917 and the first seven months of 1918. Column (d), for example, shows the gradual increase in the output of gasoline during the last 19 months. Table 2 is a group of reports as published by the Bureau of Mines, which show the monthly output of the refineries in the different districts of the United States for the first seven months of this year; and Table 3 shows the amount of each product in storage in each district for the same period.

The increase in the consumption of crude oil by refineries is as follows:

	Barrels.
Daily average 1917.....	863, 374
Daily average first seven months 1918.....	874, 964
Increase.....	11, 590
Daily average of July, 1918.....	940, 991
Increase over 1917.....	77, 617

The following tabulation shows the changes in stocks of the principal refined products, excepting gasoline, from January 1 to August 1, 1918:

Kerosene.....	barrels..	127, 744 (decrease)
Gas and fuel oils.....	do.....	737, 882 (decrease)
Lubricating oils.....	do.....	171, 878 (decrease)
Paraffine wax.....	pounds..	21, 790, 190 (increase)

For the first eight months of 1918 the approximate production, consumption, and stocks of gasoline may be shown as follows:

Month.	Production.	Stocks at end of month.	Decrease or increase in stocks for month.	Average daily decrease or increase in stocks.	Total consumption, including exports. ¹
(a)	(b)	(c)	(d)	(e)	(f)
	Barrels.	Barrels.	Barrels.	Barrels.	Barrels.
December (1917).....	.....	9 815 000	.....	.....	.....
January.....	5,580,000	11,160,000	+1,345,000	+43,400	4,235,000
February.....	5,370,000	12,350,000	+1,190,000	+42,500	4,180,000
March.....	6,410,000	12,550,000	+ 200,000	+ 6,450	6,210,000
April.....	6,990,000	12,120,000	- 430,000	-14,300	7,420,000
May.....	7,600,000	10,950,000	-1,020,000	-32,900	8,620,000
June.....	7,500,000	9,960,000	- 990,000	-33,000	8,490,000
July.....	7,900,000	8,330,000	-1,630,000	-52,600	9,530,000
August.....	* 8,000,000	* 6,830,000	-* 1,500,000	-* 48,400	* 9,500,000

¹ Obtained by decreasing or increasing the amounts in column (b) by the respective amounts in column (d).

* Estimated.

Column (d) of this table shows the excess (+) of production over consumption or the amounts (-) that had to be drawn from storage to meet the demand. It will be seen from column (e) that during July, the last month for which accurate statistics are available, the average daily shortage of gasoline was about 52,600 barrels.

To show more graphically the present status of the gasoline situation, the accompanying chart has been prepared. This chart represents the monthly output of gasoline of our refineries, the total amount of gasoline in storage at the end of each month, the amount exported from our ports during each month, and the total consumption of gasoline, the last term indicating domestic consumption as well as that exported.

The fact most strikingly represented is that the consumption of gasoline (shown by red line) is seasonal; that is, the demand is greater during the summer months, when motoring is in vogue, whereas during the bad weather of the winter months consumption falls off greatly. Just the opposite is true with the amount of gasoline stored. This is shown by the dashed line, representing the gasoline in storage at the end of each month, as shown by the chart. For instance, during

the summer months of 1917 storage was at a minimum and the maximum was reached at the end of March, 1918. At the present time gasoline stocks are falling off rapidly because of the impossibility of the entire output of our refineries to supply the increasing demand.

Statistics are not available for the consumption, production, and stocks of gasoline for the month of August, but it is estimated that the consumption will about equal that of July, so that the stocks on hand at the end of August, 1918, probably will be between 6,000,000 and 7,000,000 barrels. September will witness the culmination of our period of greatest consumption and the close of the heavy draft on stocks, unless our exports increase at a rate at present not anticipated.

The solid curve shows the constantly increasing production of gasoline, which is inadequate, however, to supply our growing demands, especially during the summer months. In normal times such

a discrepancy between production and consumption during the summer months would need cause no undue consternation, for sufficient gasoline would be stored during the winter months to more than overbalance the heavy summer demand. At the present time, however, conditions are abnormal, and it is very difficult to forecast the future. The domestic demand for gasoline during the coming winter will likely be greatly reduced because of the falling off in automobile production and the necessity of economy among the people. On the other hand, our war demand for gasoline, both at home and abroad, probably will be tremendous, especially with the advent of spring, so that the situation really is serious, but not so much because of the

present shortage as because of the forthcoming shortage of next year. We are not now producing enough crude oil to supply our refineries; gasoline stocks have been reduced to a two or three weeks' supply, and although the present situation has been well taken care of by the Fuel Administration, we are facing a tremendous demand next spring, and a demand as inflexible as it is great, for we must have adequate supplies of gasoline for our overseas forces and for those of our allies.

The need for conservation is apparent, and the American people should voluntarily forego the pleasure of needless automobile touring during these times. Such voluntary conservation now may prevent the necessity of more serious action later. Furthermore, every step should be taken by the people and by their representatives not only to conserve our present supply of gasoline but also, if possible, to increase our future supply and the supply of the crude oil from which gasoline is made.

Very truly, yours,

VAN. H. MANNING, *Director.*

The PRESIDENT OF THE SENATE.

TABLE 1.—Total output of refineries in the United States for 1917.

Month.	Run to stills.		Gasoline.	Kerosene.	Gas and fuel.	Lubricating.	Wax.	Coke.	Asphaltum.	Miscellaneous.	1917 losses.
(a)	Crude.	Other oils.	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1917	<i>Barrels.</i>	<i>Barrels.</i>	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>	<i>Pounds.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Gallons.</i>	<i>Barrels.</i>
January.....	24,839,772	(1)	203,618,724	137,248,370	469,596,208	60,941,062	39,558,627	44,627	49,894	27,331,019	911,924
February.....	23,083,433	(1)	184,612,595	129,074,514	446,984,925	54,631,765	36,370,297	42,047	40,619	23,685,686	941,110
March.....	26,230,138	(1)	221,323,571	159,028,978	494,855,838	64,315,221	40,868,480	48,839	52,823	26,977,331	873,330
April.....	25,994,933	(1)	228,945,161	157,826,945	492,846,339	63,243,215	41,037,511	46,069	52,849	31,994,911	937,533
May.....	27,233,391	(1)	238,816,299	147,894,846	594,859,695	65,926,007	33,686,364	43,535	67,612	31,096,377	979,245
June.....	26,453,210	(1)	233,071,746	151,477,333	496,712,434	61,045,757	33,269,670	42,513	67,931	31,245,172	1,011,568
July.....	26,776,835	2,435,533	244,145,292	161,679,053	599,454,966	61,335,935	33,075,280	42,641	65,272	32,959,491	1,111,511
August.....	27,910,023	2,376,580	254,464,491	149,523,513	632,151,971	64,107,817	40,158,033	46,240	73,873	92,768,312	1,246,141
September.....	27,529,022	2,632,988	256,132,050	143,293,641	629,914,572	60,757,049	33,999,341	48,849	62,520	80,346,471	1,182,560
October.....	27,698,023	2,863,518	271,891,233	140,559,542	621,492,374	68,516,071	48,310,033	45,849	73,886	91,894,160	1,352,560
November.....	26,215,979	2,519,700	264,888,709	125,893,292	592,490,027	64,981,375	41,181,400	45,815	73,289	87,115,002	1,233,110
December.....	25,155,996	2,069,351	248,846,038	123,354,046	561,954,031	61,093,596	39,694,595	45,175	58,552	87,548,408	1,233,523
Total.....	315,131,681	14,897,670	2,850,546,423	1,726,768,976	6,513,324,280	753,776,840	481,200,081	539,396	739,425	732,167,243	13,073,829

1 No account first six months 1917.

Total output of refineries in the United States for the first seven months of 1918.

Month.	Run to stills.		Gasoline.	Kerosene.	Gas and fuel.	Lubricating.	Wax.	Coke.	Asphaltum.	Miscellaneous.	Losses.
(a)	Crude.	Other oils.	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1918	<i>Barrels.</i>	<i>Barrels.</i>	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>	<i>Pounds.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Gallons.</i>	<i>Barrels.</i>
January.....	21,842,587	2,300,334	219,627,044	119,358,184	547,866,248	56,624,425	33,328,553	41,216	54,854	70,495,829	1,078,381
February.....	21,386,676	2,208,333	214,321,619	121,218,423	537,085,367	58,306,314	33,697,317	42,718	52,931	73,305,188	1,082,622
March.....	23,219,692	3,696,872	263,627,682	151,298,007	559,087,809	63,097,319	41,218	48,714	56,904	83,865,168	1,037,483
April.....	23,201,544	3,956,244	231,366,162	151,703,682	578,235,341	61,022,204	40,473,524	43,671	50,212	80,212,012	1,182,020
May.....	28,510,698	4,112,021	319,391,292	160,590,780	613,586,200	70,559,715	43,884	60,449	88,627,491	1,263,281	1,239,177
June.....	28,140,473	3,483,270	315,021,445	157,840,252	628,842,033	74,490,996	41,317,313	46,605	50,321	81,110,922	1,338,304
July.....	24,170,718	5,951,517	332,022,093	156,828,826	638,439,682	79,304,107	41,631,551	48,914	58,433	159,371,139	8,231,444
Total.....	185,492,364	25,798,613	2,096,417,535	1,014,768,031	4,143,140,714	488,568,732	283,650,716	317,892	374,233	659,349,629	8,231,444

TABLE 2.—*Output of refineries in the United States.*

JANUARY, 1918.

	East coast (New York, Philadelphia, and Balti- more).	Pennsylvania, New York, eastern Ohio, and West Virginia.	Western Ohio, Indiana, Illi- nois, Ken- tucky, and Tennessee.	Oklahoma and Kansas.	Texas and Louisiana.	Colorado and Wyoming.	California.	Total.	Daily aver- age.
Crude run.....barrels.....	4,112,262	1,356,300	1,636,344	3,995,230	5,948,069	782,776	5,368,057	23,198,978	748,354
Oils purchased and return.....do.....	606,826	79,020	221,084	136,464	485,648	332,403	365,987	2,227,432	71,853
Gasoline.....gallons.....	41,894,106	14,397,554	29,413,414	49,428,132	47,504,313	14,521,350	37,355,193	254,714,062	7,571,421
Kerosene.....do.....	31,271,202	10,329,110	9,717,354	21,932,280	23,499,798	5,149,252	13,027,781	114,926,727	3,707,314
Gas and fuel.....do.....	71,192,365	17,483,718	19,097,218	83,451,239	145,824,358	14,434,361	182,346,186	534,729,645	17,249,343
Lubricating oil.....do.....	15,025,250	12,704,120	6,694,435	3,535,630	10,828,791	4,406,139	5,311,025	54,706,360	1,764,721
Wax.....pounds.....	13,102,069	7,589,015	6,534,374	2,384,730	5,891,952	78,848	28,655	37,582,833	1,212,319
Coke.....tons.....	17,063	1,640	9,754	3,805	7,254	1,020	.....	41,216	1,330
Asphalt.....do.....	15,236	275	5,036	577	21,607	.....	14,133	54,834	1,769
Miscellaneous.....gallons.....	8,260,920	1,623,470	3,548,065	3,736,239	31,149,733	9,403,796	13,041,585	70,764,468	2,282,725
Loss.....barrels.....	202,094	75,244	130,178	155,388	196,598	62,509	145,689	1,025,700	33,087

FEBRUARY, 1918.

Crude run.....barrels.....	3,921,208	1,413,043	1,481,296	4,656,422	5,889,503	743,879	5,343,284	22,798,635	814,237
Oils purchased and return.....do.....	464,292	75,309	282,371	177,540	552,810	316,072	339,284	2,207,678	78,846
Gasoline.....gallons.....	42,380,809	16,403,334	28,748,406	50,890,044	38,831,757	14,497,491	34,002,434	225,823,365	8,065,120
Kerosene.....do.....	32,583,069	9,573,876	8,506,045	24,845,883	26,451,002	4,308,328	10,779,947	117,108,150	4,182,434
Gas and fuel.....do.....	60,256,006	15,923,596	18,137,804	86,032,060	136,106,190	14,125,351	168,277,324	498,838,331	17,816,369
Lubricating oil.....do.....	16,300,737	11,665,589	6,422,731	4,705,067	11,294,849	4,055,857	5,645,675	56,440,455	2,015,721
Wax.....pounds.....	12,126,931	6,616,464	6,399,633	2,364,915	5,503,882	123,808	137,225	33,272,888	1,188,217
Coke.....tons.....	18,292	1,830	9,679	4,590	7,035	945	.....	42,371	1,512
Asphalt.....do.....	11,361	36	4,988	688	16,593	.....	8,367	42,033	1,501
Miscellaneous.....gallons.....	4,390,100	2,280,765	3,201,761	3,290,885	40,990,797	8,877,878	12,024,123	74,966,339	2,677,369
Loss.....barrels.....	240,358	78,544	128,073	140,251	179,332	49,092	114,070	929,720	33,204

MARCH, 1918.

Crude run.....	4,988,563	1,603,174	1,768,423	4,598,303	6,998,180	888,028	5,444,791	26,239,662	836,441
Oils purchased and retun.....	883,470	133,981	500,686	307,111	811,177	48,314	532,123	3,696,872	119,254
Gasoline.....	57,758,780	20,099,742	88,529,974	56,910,416	45,559,176	16,718,415	34,051,455	269,627,968	8,697,676
Kerosene.....	49,531,526	19,040,478	12,988,840	29,292,684	32,772,454	5,142,721	11,500,794	151,228,007	4,878,323
Gas and fuel.....	21,832,435	19,624,689	24,079,004	99,556,753	177,706,769	17,809,638	176,957,012	587,953,704	18,907,284
Lubricating oil.....	21,835,811	15,893,561	8,878,064	3,460,898	11,259,071	58,003	5,527,940	69,308,331	2,235,753
Wax.....	19,707,226	7,061,312	6,583,493	3,200,955	6,739,078	186,300	2,565	49,357,019	1,417,968
Coke.....	15,916	2,053	43,221	4,403	7,489	1,136	.....	44,248	1,427
Asphalt.....	24,095	156	6,630	4,683	16,384	.....	8,953	56,401	1,836
Miscellaneous.....	10,460,963	2,520,339	4,065,035	4,537,817	48,249,657	11,711,415	13,029,922	94,865,148	3,060,166
Loss.....	220,577	89,087	151,673	168,327	298,575	48,661	150,599	1,097,449	33,403

APRIL, 1918.

Crude run.....	4,855,069	1,598,328	1,823,179	4,842,502	6,765,556	800,621	5,516,489	26,201,544	873,885
Oils purchased and retun.....	780,871	133,456	730,186	857,449	717,391	369,059	287,832	3,956,244	131,875
Gasoline.....	62,360,898	19,709,528	42,244,346	71,690,681	51,912,377	14,622,917	30,795,415	293,396,162	9,779,872
Kerosene.....	39,017,433	12,523,676	15,144,617	37,772,454	37,094,236	4,276,691	7,863,575	158,705,622	5,123,156
Gas and fuel.....	76,394,956	16,569,646	25,932,739	102,479,802	162,647,695	15,915,233	178,315,270	578,256,341	19,275,178
Lubricating oil.....	19,255,517	16,259,030	9,000,535	10,620,943	10,161,506	208,453	5,515,860	71,022,204	2,367,407
Wax.....	15,517,013	6,638,328	7,887,050	3,681,379	6,305,047	90,645	54,062	40,175,524	1,339,117
Coke.....	15,709	2,073	13,650	4,616	10,056	130	.....	45,674	1,522
Asphalt.....	23,020	332	6,116	1,424	12,255	.....	8,035	51,242	1,708
Miscellaneous.....	10,081,899	3,389,366	5,300,867	6,411,557	35,565,029	10,226,619	18,210,145	89,242,012	2,974,734
Loss.....	308,490	87,740	159,238	179,480	246,264	79,977	120,831	1,182,020	39,401

MAY, 1918.

Crude run.....	5,421,216	1,643,631	1,832,534	5,320,920	7,763,554	947,617	5,581,226	28,510,698	919,700
Oils purchased and retun.....	825,351	208,973	842,080	1,062,534	468,286	388,621	315,928	4,112,023	132,646
Gasoline.....	58,909,330	22,660,762	43,280,889	81,650,583	57,488,495	17,566,217	37,834,926	319,391,202	10,302,942
Kerosene.....	34,230,070	12,433,339	15,876,068	34,769,719	39,413,879	4,966,758	8,857,937	160,590,760	5,180,347
Gas and fuel.....	93,775,944	17,783,332	27,313,543	120,565,141	176,422,054	19,668,313	178,057,822	631,586,209	20,373,749
Lubricating oil.....	23,821,180	17,403,795	8,574,540	10,404,262	13,033,220	326,091	5,966,037	79,589,735	2,567,411
Wax.....	15,126,513	7,423,292	7,764,247	5,594,729	6,442,180	124,232	69,440	42,544,633	1,372,408
Coke.....	17,671	1,407	12,768	5,031	10,768	1,219	.....	48,864	1,576
Asphalt.....	23,021	207	9,014	1,704	15,241	.....	10,802	60,449	1,950
Miscellaneous.....	12,732,558	2,742,269	5,310,921	3,713,023	42,018,032	10,629,096	11,481,592	88,027,491	2,888,951
Loss.....	312,679	105,426	163,703	208,661	279,607	62,792	136,353	1,269,281	40,945

TABLE 2.—Output of refineries in the United States—Continued.

JUNE, 1918.

	East coast (New York, Philadelphia, and Balti- more).	Pennsylvania, New York, eastern Ohio, and West Virginia.	Western Ohio, Indiana, Illi- nois, Ken- tucky, and Tennessee.	Oklahoma and Kansas.	Texas and Louisiana.	Colorado and Wyoming.	California.	Total.	Daily aver- age.
Crude run.....barrels.....	5,222,781	1,685,857	1,976,866	5,286,171	7,019,580	1,020,453	5,988,761	28,140,479	938,016
Oils purchased and rerun.....do.....	551,528	170,136	602,089	1,048,532	511,877	385,097	213,011	3,453,270	116,109
Gasoline.....gallons.....	58,838,428	20,830,683	44,096,536	81,651,919	55,888,743	17,934,947	35,812,205	315,023,445	10,500,781
Kerosene.....do.....	37,573,446	10,886,847	15,787,164	36,433,952	39,433,339	5,257,247	6,468,257	151,840,252	5,061,342
Gas and fuel.....do.....	83,973,142	17,582,107	28,991,911	121,160,056	165,587,200	21,835,310	186,707,307	628,842,033	20,961,401
Lubricating oil.....do.....	22,231,362	17,229,927	8,782,312	9,497,013	10,384,295	327,275	5,968,812	74,420,996	2,480,700
Wax.....pounds.....	16,322,059	6,961,148	7,844,624	4,836,660	5,185,542	116,545	51,186	41,317,794	1,377,260
Coke.....tons.....	16,856	1,860	12,746	4,900	8,681	1,562	.....	46,605	1,553
Asphalt.....do.....	23,109	438	6,635	1,967	6,905	.....	11,267	50,321	1,677
Miscellaneous.....gallons.....	10,149,334	2,902,707	5,282,503	3,053,604	31,175,439	10,625,731	17,911,604	81,110,922	2,703,697
Loss.....barrels.....	303,845	118,369	182,005	212,667	281,968	62,020	121,303	1,282,177	42,739

JULY, 1918.

Crude run.....barrels.....	5,605,208	1,637,050	1,986,889	5,743,299	7,294,823	1,001,064	5,902,385	29,170,718	940,991
Oils purchased and rerun.....do.....	655,997	266,665	750,518	977,015	456,359	398,674	2,446,309	5,951,537	191,885
Gasoline.....gallons.....	62,623,071	23,496,047	42,888,655	82,895,260	59,633,799	17,892,203	42,563,060	332,022,095	10,710,300
Kerosene.....do.....	41,851,187	13,044,555	16,683,637	38,763,330	36,363,758	5,471,011	651,348	156,828,826	5,058,994
Gas and fuel.....do.....	97,532,483	16,958,874	30,828,263	128,819,621	173,917,665	19,894,925	190,488,951	658,430,682	21,236,694
Lubricating oil.....do.....	24,931,826	16,808,670	9,789,262	11,373,655	10,324,136	203,285	5,870,273	79,303,107	2,558,165
Wax.....pounds.....	18,723,340	7,159,851	6,845,671	4,385,610	4,355,938	183,793	37,308	41,691,551	1,344,880
Coke.....tons.....	1,544	139	13,006	4,992	8,685	1,660	.....	58,914	1,885
Asphalt.....do.....	32,003	139	6,900	2,029	7,561	.....	9,801	58,433	1,885
Miscellaneous.....gallons.....	7,302,036	3,420,151	3,049,380	6,369,487	28,553,264	11,875,502	98,803,919	159,374,139	5,141,101
Loss.....barrels.....	363,017	107,583	140,221	223,813	312,106	68,931	122,633	1,338,304	43,171

TABLE 3.—Stocks on hand at refineries.

JANUARY 31, 1918.

	East coast (New York, Philadelphia, and Baltimore).	Pennsylvania, New York, east Ohio, and West Virginia.	West Ohio, Indiana, Illi- nois, Kentucky, and Tennessee.	Oklahoma and Kansas.	Texas and Louisiana.	Colorado and Wyoming.	California.	Total.
Crude run.....barrels.....do.....	1,952,604 245,439	1,429,747 96,908	519,586 234,306	2,669,672 32,262	3,825,005 9,164	255,406 33,816	1,672,171 100,815	12,324,191 752,710
Gasoline.....gallons.....	95,422,432	28,529,107	82,306,424	76,129,033	103,906,660	15,036,026	67,046,584	469,277,166
Kerosene.....do.....	55,920,235	23,815,041	16,012,171	26,094,006	274,460,715	2,547,126	37,404,251	436,254,045
Gas and fuel.....do.....	107,926,887	31,497,711	11,274,520	135,702,000	142,139,319	2,154,109	116,756,229	547,450,775
Lubricating oil.....do.....	73,437,427	25,199,810	9,881,488	5,442,066	15,040,104	490,570	12,416,453	141,907,018
Wax.....pounds.....	86,396,329	21,471,341	13,971,666	4,116,232	27,797,198	3,134	51,310	153,807,210
Coke.....tons.....do.....	1,803	3,175	3,175	713	1,428	422	.....	8,010
Asphalt.....do.....	26,484	2,418	9,797	1,002	38,375	.....	14,133	92,209
Miscellaneous.....gallons.....	14,380,050	17,627,688	45,163,238	36,093,280	104,124,288	4,112,253	12,355,811	230,886,638

FEBRUARY 28, 1918.

Crude run.....barrels.....do.....	1,626,549 254,979	1,403,983 83,271	561,364 175,697	2,734,062 15,716	3,509,246 7,562	259,257 46,445	1,538,950 130,774	11,633,411 714,444
Gasoline.....gallons.....	102,391,928	32,190,630	94,295,120	83,404,362	109,212,983	22,898,771	74,200,815	518,794,009
Kerosene.....do.....	51,991,076	18,813,552	8,868,824	24,382,427	262,232,265	2,118,595	42,743,118	411,150,157
Gas and fuel.....do.....	102,313,336	25,307,313	9,022,157	107,576,622	155,245,836	2,030,712	100,547,111	502,016,087
Lubricating oil.....do.....	76,615,787	23,854,659	9,465,475	6,555,292	19,019,979	465,117	14,283,324	150,259,653
Wax.....pounds.....	81,713,640	20,015,670	14,008,705	3,642,274	29,288,137	4,218	80,304	148,732,948
Coke.....tons.....do.....	3,307	272	2,871	1,222	1,956	257	.....	9,885
Asphalt.....do.....	23,174	2,358	7,004	1,132	47,895	.....	15,132	98,695
Miscellaneous.....gallons.....	13,495,773	16,276,384	41,769,511	29,958,144	111,009,328	5,624,866	11,889,509	220,023,515

TABLE 3.—Stocks on hand at refineries—Continued.

MARCH 31, 1918.

	East coast (New York, Philadelphia, and Baltimore).	Pennsylvania, New York, east Ohio, and West Virginia.	West Ohio, Indiana, Illi- nois, Kentucky, and Tennessee.	Oklahoma and Kansas.	Texas and Louisiana.	Colorado and Wyoming.	California.	Total.
Crude run.....barrels.	1,642,008	1,262,474	606,487	2,803,641	3,574,452	418,448	2,814,638	13,122,241
Oils purchased and rerun.....do.	460,530	57,142	106,131	55,025	3,403	56,781	181,348	922,360
Gasoline.....gallons.	107,186,812	33,213,401	104,827,504	83,028,535	105,144,246	28,711,590	64,289,240	596,382,386
Kerosene.....do.	53,225,826	17,708,943	11,186,424	20,937,005	2,083,890,970	3,346,317	41,685,055	356,580,540
Gas and fuel.....do.	105,968,815	21,522,671	10,580,240	99,346,928	149,484,606	3,228,267	93,316,201	483,447,727
Lubricating oil.....do.	78,121,698	24,565,116	10,537,543	6,428,122	18,714,655	419,182	7,758,082	146,572,398
Wax.....pounds.	88,255,455	19,973,585	15,264,576	4,835,432	33,741,834	99,482	51,310	162,221,741
Coke.....tons.	4,459	321	2,671	841	55,214	161	11,301	11,301
Asphalt.....do.	23,484	2,260	9,389	1,140	55,214	.....	15,635	107,122
Miscellaneous.....gallons.	17,015,628	14,516,213	45,324,920	32,644,557	115,817,668	4,768,565	9,042,236	238,659,787

APRIL 30, 1918.

	East coast (New York, Philadelphia, and Baltimore).	Pennsylvania, New York, east Ohio, and West Virginia.	West Ohio, Indiana, Illi- nois, Kentucky, and Tennessee.	Oklahoma and Kansas.	Texas and Louisiana.	Colorado and Wyoming.	California.	Total.
Crude run.....barrels.	1,726,841	1,173,081	686,952	3,128,126	4,015,580	515,245	1,353,637	12,600,062
Oils purchased and rerun.....do.	349,803	70,223	337,450	31,144	8,376	76,529	77,674	954,205
Gasoline.....gallons.	126,653,224	31,083,043	103,692,321	74,343,019	94,844,584	24,903,585	53,677,276	509,197,134
Kerosene.....do.	53,685,647	18,371,848	14,217,433	18,893,501	245,664,831	4,949,330	37,744,826	393,527,476
Gas and fuel.....do.	106,653,665	21,358,317	12,948,249	80,040,338	161,859,060	5,832,563	82,932,137	471,644,479
Lubricating oil.....do.	75,983,235	23,654,479	9,995,369	6,411,615	19,027,364	594,093	8,717,037	144,383,212
Wax.....pounds.	71,515,421	19,550,029	15,836,386	5,003,234	39,031,385	198,322	28,532	151,228,317
Coke.....tons.	4,174	221	2,419	588	5,169	538	13,109	13,109
Asphalt.....do.	21,906	2,033	9,433	1,460	51,924	.....	14,572	101,328
Miscellaneous.....gallons.	15,244,885	14,982,480	50,273,706	39,342,123	110,454,330	5,826,197	12,166,830	248,260,551

MAY 31, 1918.

Crude oil.....	1,695,523	1,197,667	695,315	2,816,423	3,899,623	645,423	964,659	11,824,633
Oils purchased to be returned.....	252,163	76,788	310,713	41,253	2,111	81,462	101,838	872,300
Gasoline.....	118,514,813	28,703,572	95,416,962	76,328,799	76,560,249	23,207,651	41,905,433	460,637,479
Kerosene.....	61,631,884	22,006,913	17,131,227	22,050,081	181,049,469	2,332,911	38,140,150	343,341,945
Gas and fuel.....	121,041,083	22,473,332	13,064,449	76,382,512	163,951,187	9,502,319	98,574,436	515,020,224
Lubricating oil.....	84,041,999	22,052,987	11,064,100	6,542,643	22,554,800	7,703,881	10,056,207	101,009,729
Wax.....	79,486,991	22,202,240	17,043,258	3,103,682	43,889,624	138,632	233,067	168,178,328
Coal.....	5,468	2,175	9,072	2,106	54,638	310	15,583	104,214
Asphalt.....	22,943	2,175	9,072	2,106	54,638	310	15,583	104,214
Miscellaneous.....	19,206,486	15,442,692	54,220,210	33,260,046	177,637,431	6,660,306	10,688,496	317,115,697

JUNE 30, 1918.

Crude oil.....	1,864,058	1,218,088	633,523	2,006,786	3,787,361	640,903	1,205,432	11,956,151
Oils purchased to be returned.....	335,299	72,900	335,896	50,347	11,266	73,065	53,828	932,561
Gasoline.....	105,556,255	28,501,036	88,058,029	71,179,085	70,495,414	21,099,581	33,510,473	418,440,353
Kerosene.....	74,377,324	20,017,429	18,937,788	27,195,114	243,874,973	4,005,633	37,737,415	426,285,676
Gas and fuel.....	144,418,008	25,381,596	18,466,565	74,533,851	166,508,017	13,509,660	106,887,032	550,704,759
Lubricating oil.....	80,326,454	25,150,791	10,510,860	9,267,719	21,992,859	756,506	10,311,068	158,316,257
Wax.....	80,468,230	21,466,895	18,270,408	5,816,630	43,040,266	224,822	137,177	169,424,428
Coal.....	5,526	2,336	1,989	2,161	6,608	264	17,478	104,214
Asphalt.....	23,420	2,336	1,989	2,161	6,608	264	17,478	104,214
Miscellaneous.....	21,750,309	9,536,679	52,182,999	43,066,805	127,836,823	8,795,165	10,708,244	273,877,024

JULY 31, 1918.

Crude oil.....	2,050,692	1,094,440	562,114	2,400,068	6,071,068	734,178	1,104,965	14,026,525
Oils purchased to be returned.....	647,924	169,520	324,709	292,622	3,270	62,320	138,601	1,548,971
Gasoline.....	68,251,375	2,233,116	74,489,322	60,409,656	62,047,113	19,806,568	33,600,844	341,928,604
Kerosene.....	88,880,516	21,033,729	22,150,239	30,994,385	230,779,213	7,016,284	33,452,763	432,807,129
Gas and fuel.....	73,577,465	24,893,736	22,403,448	78,799,839	176,540,671	20,434,763	122,429,917	519,012,839
Lubricating oil.....	60,272,794	25,905,617	10,392,884	9,095,909	20,397,918	473,199	10,009,286	136,460,207
Wax.....	88,299,520	19,339,278	16,872,616	7,680,822	43,709,817	527,469	119,042	176,539,564
Coal.....	4,561	3,335	3,076	2,065	7,512	394	17,943	104,214
Asphalt.....	20,816	2,336	1,989	2,161	6,608	264	17,478	104,214
Miscellaneous.....	124,515,944	11,214,654	53,875,401	43,771,518	129,362,785	6,217,612	81,128,645	450,086,589

SHORTAGE IN THE SUPPLY OF CRUDE OIL.

LETTER FROM THE DIRECTOR OF THE BUREAU OF MINES TRANSMITTING, IN RESPONSE TO A SENATE RESOLUTION OF SEPTEMBER 13, 1918, INFORMATION AS TO WHAT RELIEF THE SPEEDY ENACTMENT OF THE BILL (S. 2812) TO ENCOURAGE AND PROMOTE THE MINING OF COAL, PHOSPHATE, OIL, GAS, AND SODIUM ON THE PUBLIC DOMAIN WILL GIVE THE THREATENED SHORTAGE IN THE SUPPLY OF CRUDE OIL.

SEPTEMBER 21, 1918.—Ordered to lie on the table.

DEPARTMENT OF THE INTERIOR,
BUREAU OF MINES,
Washington, September 17, 1918.

SIR: In connection with resolution passed by the Senate asking whether the enactment of S. 2812 would help the oil situation, the following is submitted:

Prior to September 27, 1909, public lands in the United States and the Territory of Alaska were subject to exploration, location, and purchase under the placer mining laws of the United States (secs. 2329-2331, R. S.; acts of Feb. 11, 1897, 29 Stat., 526, and Feb. 12, 1903, 32 Stat., 825). Under these laws any citizen of the United States or person who had declared his intention to become such could go upon the public lands and explore for oil, and upon discovery apply for and receive patent as prescribed in the mining laws. September 27, 1909, the President of the United States withdrew from exploration, location, and entry large areas of public lands known or believed to contain valuable deposits of petroleum for the primary purpose of withholding same until Congress could consider legislation designed to secure the exploration for and development of deposits of oil and gas under a leasing law. Similar withdrawals had been made from time to time until at the present there are withdrawn from all exploration, location, and entry 6,524,834 acres of land either known to contain oil and gas or believed to possess possibilities thereof. This acreage is not all public lands, as considerable areas within the exterior limits of withdrawals were patented under the various public-land laws prior to dates of withdrawal. There are also withdrawn 132,024 acres of land known to contain valuable deposits of oil shale. The withdrawals cover lands in the States of Arizona, California, Colorado, Louisiana, Montana, North Dakota, Utah, and Wyoming. In addition all lands containing deposits of oil in the Territory of Alaska are likewise withdrawn.

Most of the lands so withdrawn are free from claims and would, if Senate bill 2812 or other legislation providing for their disposition were enacted into law, be subject to exploration and development in accordance with its provisions. A minor portion of the area, comprising valuable proven oil territory, was, however, covered by locations made under the mining law prior to withdrawal and the claims so

asserted have not been disposed of, but are pending in the land department or in the courts. Most of these claims have upon them one or more producing oil wells, but increased production through the drilling of additional wells is practically halted by the withdrawal. The so-called relief provisions of Senate bill 2812 are designed to adjust these controversies and secure the development of the lands.

In my opinion, the enactment of a law providing for the development of the oil lands of the United States would (1) open to exploration and development the vast areas of public land in the United States and Alaska now absolutely withdrawn from exploration and development, thereby resulting in the discovery and development of new oil fields and deposits, thus adding to the oil and gas supply of the United States and Alaska; (2) permit of the leasing of lands now withdrawn and actually proven to contain valuable deposits of oil and gas by the existing wells upon the lands or upon adjoining tracts (these fields are principally located in California, Wyoming, Montana, and Louisiana); and (3) permit of the further development of existing claims within withdrawn areas which have upon them one or more producing oil wells. These areas are already equipped with pipe lines and facilities for developing and transporting oil, and many of the interested individuals and corporations have equipment, in the way of casing and other supplies, which could be immediately utilized in the drilling of additional wells.

The most immediate results would be obtained from the lands mentioned in the above items 2 and 3, namely, proven lands which have not been developed by oil wells and lands within withdrawals, but which have within their limits one or more producing oil wells at the present time.

During the past few years I have made a number of reports and suggestions to the Public Land Committees of Congress with respect to legislation of the character involved, and bills have passed one of the bodies of Congress, but none has received concurrent approval. I do not feel that I should at this time specifically indorse any particular measure, and consequently this report is designed to explain, briefly, why I believe the enactment of legislation for the development of the oil resources of the public domain would materially aid in obtaining an increased fuel supply in the immediate future. It must be obvious to any one familiar with the situation that the existing withdrawals and controversies prevent the bringing of the oil from underground and into use, and the conditions described in the report of the United States Fuel Administrator in his report to the Senate, dated September 10, 1918, Document 277, and in my report responding to Senate resolution 301, which gave in some detail the present situation, with special reference to gasoline, emphasize the importance and desirability of the enactment of legislation which will, while properly preserving the public interest, stimulate and encourage the production of oil from our public lands.

I am of the opinion, therefore, that, viewed from any angle, the passage of a leasing bill is desirable, and conditions possibly will arise that will make it distinctly a war measure.

Respectfully,

VAN. H. MANNING, *Director.*

The PRESIDENT UNITED STATES SENATE.